

Description of Project

The City of Rialto has always managed its water resources with a mind toward conservation. In the past few years, circumstances such as the ongoing drought, increasing population, and perchlorate contamination have combined to make it more difficult for the City to produce adequate water to meet its peak demand. With this in mind, the City is developing a program intended to reduce loss and conserve water. The program will initially include the following five steps:

1. Pro-Active Water Meter Replacement Program (24 months, 2,000 meters, \$320,000) -- In addition to the current 'replace upon failure' practice for the City's 11,000+ water meters, funding would allow the City to begin replacing meters that have exceeded their useful life, prior to loss of accuracy and subsequent failure. Meters have an average useful life of 20 years, but begin to run more slowly after 15 years. This slowing affects the accuracy of the meter. Accuracy is reduced by as much as 40% during high flow usage such as landscape irrigation. As a result, customers are using water for which they are not accountable. Accurate metering and billing, coupled with the City's tiered rate schedule, will result in greater consumer water conservation.
2. Pro-Active Water Backflow Device Replacement Program (24 months, 160 devices, \$64,000) -- Like water meters, backflow devices have a useful life of 20 years. However, as these fail, usually in the last five years of use, they blow out causing large amounts of water loss and erosion damage.
3. Leak Detection Study (6 months, \$47,000) -- The City currently delivers in excess of 4 billion gallons of water annually. A 1% reduction in water loss due to leakage would save the City 40,000,000 gallons of water annually. Loss due to leakage is currently 5%. The City's goal is to reduce that by 2%. With the information provided by this study the City will be able to direct its leakage mitigation and conservation efforts more effectively.
4. Low Flush Toilet Installation (24 months, 102 units, \$40,800) -- The City will replace 102 units in its facilities that use 7 gpf with units that use 2.5 gpf for a 64% reduction in usage.
5. Vapor Barrier Pool Cover for Public Pool (4 months, \$25,000) -- The City's public swimming pool has a surface area of 5000 sqft which can lose more than 547,500 gallons of water per year to evaporation. The US Department of Energy reports that water evaporation is the single largest source of energy over-consumption, accounting for 70% of total energy lost in both outdoor and indoor pools. A pool cover can reduce the amount of make-up water required by as much as 50% and reduce the amount of required water treatment chemicals.

These are only five steps in the direction of the comprehensive water conservation program which is the City of Rialto's goal.

Application Checklist

Complete this checklist to confirm all sections of this application package have been completed.

Part A: Project Description, Organizational, Financial and Legal Information

- ☒ A-1 Urban Water Conservation Grant Application Cover Sheet
- ☒ A-2 Application Signature Page
- ☒ A-3 Application Checklist
- ☒ A-4 Description of project
- ☒ A-5 Maps
- ☒ A-6 Statement of work, schedule
- ☒ A-7 Monitoring and evaluation
- ☒ A-8 Qualification of applicant and cooperators
- ☒ A-9 Innovation
- ☒ A-10 Agency authority
- ☒ A-11 Operation and maintenance (O&M)

Part B: Engineering and Hydrologic Feasibility (construction projects only)

- ☒ B-1 Certification statement
- ☐ B-2 Project reports and previous studies
- ☐ B-3 Preliminary project plans and specifications
- ☐ B-4 Construction inspection plan

Part C: Plan for Environmental Documentation and Permitting

- ☐ C-1 CEQA/NEPA
- ☐ C-2 Permits, easements, licenses, acquisitions, and certifications
- ☐ C-3 Local land use plans
- ☐ C-4 Applicable legal requirements

Part D: Need for Project and Community Involvement

- ☒ D-1 Need for project
- ☒ D-2 Outreach, community involvement, support, opposition

Part E: Water Use Efficiency Improvements and Other Benefits

- ☒ E-1 Water use efficiency improvements
- ☐ E-2 Other project benefits

Part F: Economic Justification, Benefits to Costs Analysis

- ☒ F-1 Net water savings
- ☒ F-2 Project budget and budget justification
- ☒ F-3 Economic efficiency

Appendix: Benefit/Cost Analysis Tables

- ☒ Tables 1; 2; 3; 4a, 4b, 4c, 4d; and 5

Innovation

Although pool covers and low flush volume toilets are not innovations that the City can claim, the other aspects of this project may prove useful, especially to the communities in this immediate area. For example, since the City began a pro-active approach to meter and backflow device replacement, water loss has been reduced to 5%. It is expected that the Leak Detection Study will provide valuable information, not only for the City, but for neighboring communities that share our aquifer as well.

Agency Authority

1. Does the applicant (official signing A-2, Application Signature Page) have the legal authority to submit an application and to enter into a funding contract with the State? **Yes, see attached letter of authorization.**
2. What is the legal authority under which the applicant was formed and is authorized to operate? **The City of Rialto was incorporated in 1911.**
3. Is the applicant required to hold an election before entering into a funding contract with the State? **No.**
4. Will the funding agreement between the applicant and the State be subject to review and/or approval by other government agencies? If yes, identify all such agencies (e.g. Local Area Formation Commission, local governments, U.S. Forest Service, California Coastal Commission, California Department of Health Services, etc.). **No.**
5. Is there any pending litigation that may impact the financial condition of the applicant, the operation of the water facilities, or its ability to complete the proposed project? If none is pending, so state. **No, none is pending.**

Operations and Maintenance

The operations and maintenance costs for the City's current water system for FY 2002/03 is as follows:

• Water Fund Administration	\$3,436,916.00
• Water System	\$2,426,220.00
• Water Pumping	\$1,055,001.00
• Water Purchases	\$ 533,750.00
• Reservoir Loan Payments	<u>\$ 563,663.00</u>
TOTAL	\$8,015,550.00

Revenue source for operations and maintenance is the enterprise fund.

A-9 Innovation

A-10 Agency Authority

A-11 Operations and Maintenance

Table 5: Benefit/Cost Ratio

Project Benefits (\$) (1)	\$790,850.00
Project Costs (\$) (2)	\$306,680.00
Benefit/Cost Ratio	2.58:1

(1) From Tables 4d, row (d): Total Annual Water Supply Benefits

(2) From Table 3, column (c) : Total Annual Costs

Need for the Project

While water conservation in the Inland Empire of Southern California has always been a concern, due in large part to the climate, the last decade has seen a heightening of awareness and concern as the area has been plunged into a multi-year drought. In addition, the population in the area has grown significantly, and continues to grow. These pressures become even more significant in the City of Rialto where perchlorate contamination in the ground water supply has exacerbated the problem and forced the closure of five of the City's wells. With two more wells in the path of the perchlorate plume and therefore in jeopardy of being closed, the resultant loss in production to the City is 14.6 million gallons of water per day and could grow by an additional 6 million gallons. Surrounding cities are also affected by the perchlorate plume both directly and indirectly. Directly because their wells are or may become contaminated as the plume grows. Indirectly because the additional demand on finite, alternate sources of potable water will cause water prices to soar. Wellhead treatment possibilities are under investigation. However, capital outlay for such treatment is estimated at \$1,500,000 per well, with annual O&M of \$500,000 per well. Funding under the current budget is not available for this enormous task.

Until the production from these wells can be restored or replaced, it is imperative that the City take whatever steps it can to increase its conservation efforts. The five items outlined in the project description are steps in that direction.

Outreach, Community Involvement, Support, Opposition

Community involvement and support for this project has been sought and received, as is evidenced by the attached letter from the Rialto Unified School District, one of the water system's largest users. The City is currently partnering with the School District in an aggressive water conservation program for the district's schools. There has been no opposition to the steps proposed in this project.

Project Budget and Budget Justification

		materials	labor
Land Purchase/Easement	n/a		
Planning/Design/Engineering			
Leak Detection Study			
1000 man hours @ \$42.00/hr			\$42,000.00
subtotal	\$42,000.00		
Materials/Installation			
2000 Water Meters @ \$82.20/ea.		\$164,400.00	
Installation @ \$37.60/ea.			\$135,200.00
160 Backflow Devices @ \$275.00/ea.		\$44,000.00	
Installation @ \$70.00/ea.			\$11,200.00
102 Low Flush Toilets @ \$300.00/ea.		\$30,600.00	
Installation @ \$65.00/ea.			\$6,630.00
		\$239,000.00	\$153,030.00
subtotal	\$392,030.00		
1 Vapor Barrier Pool Cover			
complete in place	\$25,000.00		
Structures	n/a		
Equipment Purchases/Rentals	n/a		
Environmental Mitigation/Enhancement	n/a		
Construction Administration/Overhead	\$137,130.00		
Legal & License Fees	n/a		
Other	n/a		
Contingency Costs (up to 15% of budget)	n/a		
TOTAL	\$596,160.00		

Statement of Work

The work of this project will be broken down as follows:

1. Pro-Active Water Meter Replacement Program – A total of 2,000 water meters will be replaced at a rate of 250 per quarter over a 2 year period. Work will be performed by Water Division maintenance personnel.
2. Pro-Active Water Backflow Device Replacement Program – A total of 160 backflow devices will be replaced at a rate of 20 per quarter over a 2 year period. Work will be performed by Water Division maintenance personnel.
3. Leak Detection Study – This study would be performed over a six month period using information provide by the Water Division. Work will be performed by the Water Division personnel.
4. Low Flush Toilet Installation – Approximately 102 units throughout the City's facilities will be replaced at a rate of 13 per quarter over a 2 year period. Work will be performed by Maintenance Division personnel.
5. Vapor Barrier Pool Cover for Public Pool – Fabrication and installation of the swimming pool cover will be out-sourced. City personnel are currently preparing a bid request to secure these services. Project duration should not exceed 4 months.

Monitoring and Evaluation

The work aspects of this project which will be performed by Public Works Department staff will be monitored and evaluated by staff supervisors and City Inspectors. The results and benefits of their work will also be monitored and evaluated by staff supervisors using methodology already in place. These include production and usage rate data, as well as estimates of un-metered use and leakage. The Leak Detection Study will provide the City with better methods of monitoring and evaluating its water supply system.

Table 1: Capital Costs

	Capital Cost Category (a)	Cost (b)	Contingency Percent (c)	Contingency \$ (d)	Subtotal (e)
				(bxc)	(b+d)
(a)	Land Purchase/Easement				
(b)	Planning/Design/Engineering	\$42,000.00			\$42,000.00
(c)	Materials/Installation	\$417,030.00			\$417,030.00
(d)	Structures				
(e)	Equipment Purchases/Rentals				
(f)	Environmental Mitigation/Enhancement				
(g)	Construction/Administration/Overhead	\$137,130.00			\$137,130.00
(h)	Project Legal/License Fees				
(i)	Other				
(j)	Total (1) (a + ... + i)	\$596,160.00			\$596,160.00
(k)	Capital Recovery Factor: use Table 6	0.5			0.5
(l)	Annual Capital Costs (j x k)	\$298,080.00			\$298,080.00

(1) Costs must match Project Budget prepared in Section F-2.

Table 2: Annual Operations and Maintenance Costs

Administration (a)	Operations (b)	Maintenance (c)	Other (d)	Total (e)
\$2,200.00		\$6,400.00		\$8,600.00

Table 3: Total Annual Costs

Annual Capital Costs (1) (a)	Annual O&M Costs (2) (b)	Total Annual Costs (c) (a+b)
\$298,080.00	\$8,600.00	\$306,680.00

(1) From Table 1 line (l)

(2) From Table 2 Total, column (e)

Urban Water Conservation Grant Application Cover Sheet

1. Applicant (Organization or affiliation): City of Rialto, Public Works Department

2. Project Title: Rialto Leak Detection & Water Conservation Program

3. Person authorized to sign and submit proposal:

Name, Title	Bradley L. Baxter, Public Works Director
Mailing address	335 W. Rialto Ave., Rialto, CA 92376
Telephone	909-421-7229
Fax	909-421-7210
E-mail	baxterb@ci.rialto.ca.us

4. Contact person (if different):

Name, Title	Peter J. Fox
Mailing address	335 W. Rialto Ave., Rialto, CA 92376
Telephone	909-421-7244
Fax	909-421-7210
E-mail	foxp@ci.rialto.ca.us

5. Funds requested (dollar amount): \$496,800.00

6. Applicant funds pledged (local cost share) (dollar amount): \$ 99,360.00

7. Total project costs (dollar amount): \$596,160.00

8. Estimated net water savings (acre-feet/year): 261af/yr

Estimated total amount of water to be saved (acre-feet): 290af/yr

Over 10 years 2900af

Benefit/cost ratio of project for applicant: 2.58:1

Estimated \$/acre-feet of water to be saved: \$300.00

9. Project life (month/year to month/year): 10/01/03 – 09/30/05

10. State Assembly District where the project is to be conducted: 62nd

11. State Senate District where the project is to be conducted: 32nd

12. Congressional District(s) where the project is to be conducted: 42nd

13. County where the project is to be conducted: San Bernardino

14. Do the actions in this application involve physical changes in land use, or potential future changes in land use?

(a) Yes

(b) No

NO

Application Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the application;

The individual signing the form is authorized to submit the application on behalf of the applicant;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the application on behalf of the applicant; and

The applicant will comply with all terms and conditions identified in this Application Package if selected for funding.

Signature

Bradley L. Baxter
Director of Public Works

Date

4c. Water Supplier Revenue (Vendibility)

Parties Purchasing Project Supplies (a)	Amount of Water to be Sold (b)	Selling Price (\$/AF) (c)	Expected Frequency of Sales (%) (1) (d)	Expected Selling Price (\$/AF) (e) (c x d)	"Option" Fee (\$/AF) (2) (f)	Total Selling Price (\$/AF) (g) (e + f)	Annual Expected Water Sale Revenue (\$) (h) (b x g)
none	n/a	n/a	n/a	n/a	n/a	n/a	
Total							0.00

(1) During the analysis period, what percentage of years are water sales expected to occur? For example, if water will only be sold half of the years, enter 50% (0.5).

(2) "Option" fees are paid by a contracting agency to a selling agency to maintain the right of the contracting agency to buy water whenever needed. Although the water may not be purchased every year, the fee is usually paid every year.

4d: Total Water Supply Benefits

(a) Annual Avoided Cost of Current Supply Sources (\$) from 4a, column (d)	\$87,000.00
(b) Annual Avoided Cost of Alternative Future Supply Sources (\$) from 4b, column (f)	\$703.850.00
(c) Annual Expected Water Sale Revenue (\$) from 4c, column (h)	0.00
(d) Total Net Annual Water Supply Benefits (\$) (a + b + c)	\$790,850.00

Table 4: Water Supply BenefitsNet water savings (acre-feet/year): 290

4a. Avoided Costs of Current Supply Sources

Sources of Supply (a)	Cost of Water (\$/AF) (b)	Annual Displaced Supply (AF) (c)	Annual Avoided Costs (\$) (d) (b x c)
State Water	\$300.00	290	\$87,000.00
Total			\$87,000.00

4b. Alternative Costs of Future Supply Sources

Future Supply Sources (a)	Total Capital Costs (\$) (b)	Capital Recovery Factor (1) (c)	Annual Capital Costs (\$) (d) (b x c)	Annual O&M Costs (\$) (e)	Total Annual Avoided Costs (\$) (f) (d + e)
Treated Well	\$1,500,000.00	0.1359	\$203,850.00	\$500,000.00	\$703,850.00
Total					

(1) 6% discount rate; Use Table 6- Capital Recovery Factor

Water Use Efficiency Improvements

All aspects of the proposed project will contribute to the more efficient distribution and use of the City's water supply.

1. Pro-Active Water Meter Replacement Program – More effective metering of water usage will produce a greater awareness across the board of actual water consumption. This greater awareness will in turn produce an increase in water conservation activities.
2. Pro-Active Water Backflow Device Replacement Program – The replacement of these backflow devices prior to complete failure as well as the development of a regular replacement schedule for future years will decrease the water losses from device failure as well as reduce the leakage older devices experience prior to complete failure.
3. Leak Detection Study – This study will provide the City with the information it need to understand how and where leakage and water loss are occurring, and develop a program for leakage mitigation.
4. Low Flush Toilet Installation – The replacement of these older, high flush volume toilets, with low volume units, will reduce water consumption by 64%.
5. Vapor Barrier Pool Cover for Public Pool – Installation of a vapor barrier pool cover will reduce water loss from evaporation by as much as 70%. In addition to the water conservation, less energy will be consumed for heating purposes.

Net Water Savings

1. Pro-Active Water Meter Replacement Program – These first three steps are aimed at further reducing the City's leakage loss. If successful, a reduction of 2% will save approximately 285 acre feet of water annually.
2. Pro-Active Water Backflow Device Replacement Program –
3. Leak Detection Study –
4. Low Flush Toilet Installation – Water savings from the replacement of the City's 102 high volume toilets will save more than 3 acre feet of water annually.
5. Vapor Barrier Pool Cover for Public Pool – Installation of a vapor barrier pool cover on the City's public pool will save 2 acre feet of water annually.